

U.S. Department of Energy Orders Self-Study Program

DOE O 440.1A

**WORKER PROTECTION MANAGEMENT
FOR DOE FEDERAL AND CONTRACTOR EMPLOYEES**



ALBUQUERQUE OPERATIONS OFFICE

**DOE ORDER O 440.1A
WORKER PROTECTION MANAGEMENT FOR DOE FEDERAL AND
CONTRACTOR EMPLOYEES
FAMILIAR LEVEL**

OBJECTIVES

Given the Familiar Level of this module and the resources listed below, you will be able to:

1. State the objectives of DOE Order O 440.1A.
2. State the requirements that DOE Elements must meet according to this Order.
3. State the objectives that must be accomplished by the suspect/counterfeit item (S/CI) controls that are required to be implemented by this Order and the requirements of S/CI controls Management Systems.
4. State the hazard prevention/abatement process that must be implemented according to this Order.
5. List the responsibilities assigned by this Order for the following.
 - a. Assistant Secretaries
 - b. Heads of Field Elements
 - c. Operations Office Managers
 - d. Associate Deputy Secretary for Field Management
 - e. Assistant Secretary for Environment, Safety and Health
 - f. Contracting Officers
6. List the responsibilities assigned to the following positions.
 - a. Heads of Field Elements
 - b. Construction Project Managers
7. State the elements of an acceptable fire protection program.

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8. State the requirements for Firearm Safety.
9. State the firearm safety responsibilities for the following.
 - a. Operations Office Managers
 - b. Office of Security Affairs
10. State the elements that must be included in Industrial Hygiene.
11. State the Pressure Safety requirements.
12. State the areas that must be addressed in Motor Vehicle Safety.
13. State what DOE requires of the contractor in the following areas.
 - a. construction safety
 - b. occupational medical programs
 - c. quality assurance programs and S/CI controls

<p>Note: If you think that you can complete the practice at the end of this level without working through the instructional material and/or the examples, complete the practice now. The course manager will check your work. You will need to complete the practice in this level successfully before taking the criterion test.</p>
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RESOURCES

DOE Order O 440.1A, Worker Protection Management for DOE Federal and Contractor Employees, 3/27/98.

Note: The following references, annotated in DOE O 440.1A, may be required to answer questions in the practice and criterion test for this module.

DOE Order O 231.1, Environment, Safety, and Health Reporting, Change 2, 11/7/96.

DOE Order O 232.1A, Occurrence Reporting and Processing of Operations Information, 8/1/97.

DOE Order O 225.1, Accident Investigations.

DOE Order O 210.1, Performance Indicators Program and Analysis of Operations, Change 2, 5/1/96.

DOE Order O 420.1, Facility Safety, Change 2, 10/24/96.

DOE M 440.1-1 DOE Explosives Safety Manual, 3/29/96.

29 CFR 1960, Basic Program Elements for Federal Employee Occupational Safety and Health Programs and Related Matters.

American Conference of Governmental Industrial Hygienists, Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, most recent edition.

American National Standards Institute Z136.1, Safe Use of Lasers.

American National Standards Institute Z88.2, Practices for Respiratory Protection.

INTRODUCTION

The Familiar Level of this module is divided into three sections. In the first section, we will discuss the Order proper and provide information related to Objectives 1 through 5. In the second section, we will discuss the content of Attachment 1 and cover Objectives 6 through 12. Attachment 2 is discussed in the third section and covers Objective 13. We have provided several examples and practices throughout the module to help familiarize you with the material. The practices will also help prepare you for the criterion test.

Before continuing, you should obtain a copy of DOE Order 440.1A. Copies of the Orders are available on the Las Alamos National Laboratory Website at <http://iosun.lanl.gov:1776/htmls/directives.html> or through the course manager. It is not necessary to obtain copies of the other resources listed for this module. However, you should be familiar with these resources. You may need to refer to these documents to complete the examples, practice, and criterion test.

SECTION 1

OBJECTIVE

To establish the framework for an effective worker protection program that will reduce or prevent accidental losses, injuries, and illnesses by providing DOE Federal and contractor workers with a safe and healthful workplace.

REQUIREMENTS

1. Implement a written worker protection program.
2. Establish written policy, goals, and objectives for the worker protection program.
3. Use qualified worker protection staff to direct and manage the worker protection program.
4. Assign worker protection responsibilities, evaluate personnel performance, and hold personnel accountable for worker protection performance.
5. Encourage the involvement of employees in the development of program goals, objectives, and performance measures and in the identification and control of hazards in the workplace.
6. Provide workers the right to: accompany DOE worker protection personnel during workplace inspections; participate in activities provided for in this Order on official time; express concerns related to worker protection; decline to perform an assigned task because

of a reasonable belief that the task poses an imminent risk of death or serious bodily harm; have access to DOE worker protection publications, DOE- prescribed standards, and the organization's own worker protection standards or procedures applicable to the workplace; observe monitoring or measuring of hazardous agents and have access to the results of exposure monitoring; be notified when monitoring results indicate they were overexposed to hazardous materials; and receive results of inspections and accident investigations upon request.

7. Implement procedures to allow workers to stop work when they discover serious hazards.
8. Inform workers of their rights and responsibilities.
9. Identify existing and potential workplace hazards and evaluate the risk of associated worker injury or illness.
10. Implement suspect/counterfeit item (S/CI) controls (Refer to Section 4.i.(5), paragraphs (a) through (e) of the Order for details of this requirement).
11. Implement a hazard prevention/abatement process to ensure that all identified hazards are managed through final abatement or controls (Refer to Section 4.j, paragraphs 1 through 4 of the Order for details of this requirement).
12. Provide workers, supervisors, managers, visitors, and worker protection professionals with worker protection training.

RESPONSIBILITIES

Assistant Secretaries

1. Ensure that program-specific worker protection goals and objectives are developed and resources are provided.
2. Ensure that worker protection policies and requirements are effectively implemented.
3. Develop or participate in recognition programs that encourage the improvement of worker protection programs.
4. Assist in the resolution of significant worker protection issues and the improvement in cost effectiveness and efficiency of worker protection programs.
5. Review and be approving authority for exemptions to requirements contained in this Order.

Heads of Departmental Elements and Heads of Field Elements

1. Ensure that contractors implement effective worker protection programs.
2. Review contractor worker protection program budgets, and provide recommendations to the funding official on the appropriateness of the budget request.

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3. Provide contractors with technical direction on and criteria for the development of contractor goals, objectives, and performance measures.
4. Hold DOE line personnel accountable for providing technical direction to contractors that is consistent with the requirements contained in this Order.
5. Evaluate the need for and direct the development of formal written agreements between organizations on their sites.
6. Review and forward to DOE Headquarters all exemptions, exceptions, and variances to mandatory worker protection requirements contained in this Order. Conduct an annual review of the status of all exemptions to the requirements contained in this Order to ensure that circumstances requiring the need for relief have not changed and that instituted controls are still implemented and appropriate

Operations Office Managers (and Heads of Field Elements, where applicable)

1. Ensure that unannounced worker protection inspections of contractor workplaces are conducted at least annually.
2. Ensure immediate and effective remedial actions are taken for imminent danger situations. Conduct an inspection as soon as possible after an imminent danger situation has been corrected to ensure that appropriate actions have been taken to preclude recurrence.
3. Determine if adequate protection can be achieved by continuing to operate under the terms of existing contracts requiring compliance with old Orders or, if it is necessary, modify the contract to incorporate the CRD (Attachment 2) requirements.
4. Ensure that initiators of procurement requests specify if requirements in the CRD (Attachment 2) are to be applied to the resulting award or subawards.

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Associate Deputy Secretary for Field Management

Facilitate resolution of conflicting worker protection programs, policies, and procedures among Heads of Departmental Elements and field organizations.

Assistant Secretary for Environment, Safety and Health

Establish committees as necessary to assist in the development of departmental requirements and guidance.

Contracting Officers

Require contractors to comply with worker protection requirements.

Note: You do not have to do Example 1 on the following pages, but it is a good time to check your skill and knowledge of the information covered. You may do the Example 1 or go to Section 2.

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EXAMPLE 1

Using the Familiar level of this module and the resources, complete the following exercises.

1. State in your words what the DOE hopes to achieve by implementing DOE Order O 440.1A.
2. State the hierarchy used to determine appropriate hazard control methods.
3. State the position that is assigned the responsibility for ensuring that unannounced, annual worker protection inspections are conducted.

Note: When you are finished, compare your answers to those contained in the Example 1 Self-Check. When you are satisfied with your answers, go to Section 2.

EXAMPLE 1 SELF-CHECK

1. State in your words what the DOE hopes to achieve by implementing DOE Order O 440.1A.
To establish the framework for an effective worker protection program that will reduce or prevent accidental losses, injuries, and illnesses by providing DOE Federal and contractor workers with a safe and healthful workplace.
2. State the hierarchy used to determine appropriate hazard control methods.
Hazard control methods are selected based on the following hierarchy.
 1. Engineering controls
 2. Work practices and administrative controls that limit worker exposures
 3. Personal protective equipment
3. State the position that is assigned the responsibility for ensuring that unannounced, annual worker protection inspections are conducted.
Operations Office Managers or Heads of Field Elements

SECTION 2, FUNCTIONAL AREA REQUIREMENTS FOR DOE ELEMENTS (ATTACHMENT 1)

This section includes requirements and responsibilities for the following Elements.

- Construction Safety
- Fire Protection
- Firearms Safety
- Explosives Safety
- Industrial Hygiene
- Pressure Safety
- Motor Vehicle Safety

CONSTRUCTION SAFETY

The following responsibilities apply for construction projects above the monetary threshold established by the Davis-Bacon Act (40 U.S.C. 276a) at Government-owned or -leased facilities where the contract clause ‘Safety and Health (Government-Owned or -Leased Facility)’ applies.

Heads of Departmental Elements and Heads of Field Elements

1. Designate a project manager for each construction project.
2. Ensure that project managers are provided with the training, resources, and technical support necessary to perform the duties prescribed by this Order.
3. Develop formal written agreements/implementing instructions as needed to delineate the respective construction safety responsibilities/duties of DOE project management and technical support staffs as well as affected site contractors.
4. Review safety and health programs developed for site maintenance and operational activities to determine their applicability and cost effectiveness on construction projects.
5. Direct the development and implementation of a system for evaluating the effectiveness of construction contractor safety and health programs.
6. Ensure that applicable requirements of this Order are specified within construction project acquisition documents.

Construction Project Managers

1. Determine the necessity for requiring dedicated construction contractor safety and health personnel on project workplaces.
2. Ensure that construction project acquisition documents provide information or reference to existing documentation that describes known hazards to which project workers may be

exposed.

3. Ensure that a prework safety meeting is conducted with the construction contractor to review project safety and health requirements.
4. Ensure that the project safety and health plan is approved prior to any on-site project work and that required hazard analyses are completed and approved prior to start of work on affected construction operations.
5. Ensure that project safety and health plans and hazard analyses are revised, as necessary, to address identified deficiencies in project safety and health performance or changes in project operations, contractors, or personnel.
6. Through personal on-site involvement and/or formal delegation to support staff and/or the construction manager, perform frequent and regular documented on-site reviews of construction contractor safety and health program effectiveness.
7. Ensure documentation of all formal contract actions taken to enforce construction contractor compliance with project safety and health requirements.

FIRE PROTECTION

Implement a comprehensive fire protection program with the objective of providing an acceptable level of safety from fire and related hazards for DOE Federal personnel and for the public. This includes appropriate facility and site-wide fire protection (refer to DOE O 420.1, Facility Safety), fire alarm notification and egress features, and access to a fully staffed, trained, and equipped fire department that is capable of responding in a timely and effective manner to site emergencies.

An acceptable fire protection program includes those fire protection criteria and procedures, analyses, hardware and systems, apparatus and equipment, and personnel that comprehensively ensure that the above objective is met. This includes meeting applicable building codes and National Fire Protection Association Codes and Standards or exceeding them (when necessary to meet safety objectives), unless explicit written relief has been granted by DOE.

Fire watcher requirements in National Fire Protection Association 51B, Section 3-3.3, are expanded to include responsibility for the safety of the welder(s) in addition to that of the facility.

FIREARMS SAFETY

Requirements

1. Establish firearms safety policies and procedures to ensure proper accident prevention controls are in place.
2. Ensure that staff members responsible for the direction and operation of the firearms safety program are professionally qualified and have sufficient time and authority to implement the established program.
3. Conduct formal appraisals assessing implementation of procedures, personnel responsibilities, and duty assignments to ensure overall policy objectives and qualified safety personnel are meeting performance criteria.
4. Implement safety provisions related to firearms safety training, qualification, or requalification.
5. Ensure that the transportation, handling, placarding, and storage of munitions conform to the applicable requirements of DOE M 440.1-1, DOE Explosives Safety Manual (Formerly DOE/EV/06194).

Responsibilities

Operations Office Managers

1. Ensure effective implementation and control of the firearms safety program.
2. Approve the location and use of the contractor's live fire ranges.

Office of Security Affairs

1. Approve the location of live fire ranges for the Safeguards and Security Central Training Academy.

EXPLOSIVES SAFETY

Ensure that applicable explosives operations comply with DOE M 440.1-1, DOE Explosives Safety Manual

INDUSTRIAL HYGIENE

Implement a comprehensive and effective industrial hygiene program to reduce the risk of work-related disease or illness at affected facilities. Industrial hygiene programs shall include the following elements.

1. Initial or baseline surveys of all work areas or operations to identify and evaluate potential worker health risks.
2. Coordination with planning and design personnel to anticipate and control health hazards that proposed facilities and operations would introduce.
3. Periodic resurveys and/or exposure monitoring as appropriate.
4. Documented exposure assessment for chemical, physical, and biological agents and ergonomic stressors using recognized exposure assessment methodologies and use of accredited industrial hygiene laboratories.
5. Specification of appropriate engineering, administrative, work practice, and/or personal protective control methods to limit hazardous exposures to acceptable levels.
6. Worker education, training, and involvement.
7. Coordination with cognizant occupational medical, environmental, health physics, and work planning professionals.
8. Use of DOE-accepted respiratory protection when National Institute of Occupational Safety and Health-approved respiratory protection does not exist for DOE tasks.
9. Policy and procedures to mitigate the risk from identified and potential occupational carcinogens.
10. Use of appropriate industrial hygiene standards.
11. Professionally and technically qualified industrial hygienists to manage and implement the industrial hygiene program.

PRESSURE SAFETY

Requirements

1. Ensure that all pressure vessels, boilers, air receivers, and supporting piping systems conform to: (a) the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Safety Code; (b) the American National Standards Institute/ASME B.31 Piping Code; and/or (c) the strictest applicable State and local codes.
2. When national consensus codes are not applicable (because of pressure range, vessel geometry, use of special materials, etc.), implement measures to provide equivalent protection and ensure safety equal to or superior to the intent of the ASME code.

MOTOR VEHICLE SAFETY

Implement a Motor Vehicle Safety Program to protect the safety and health of all drivers and passengers in Government-owned or -leased motor vehicles and powered industrial equipment (i.e., fork trucks, tractors, platform lift trucks, and other similar specialized equipment powered by an electric motor or an internal combustion engine). The Motor Vehicle Safety Program shall be tailored for the individual DOE site or facility, based on an analysis of the needs of that particular site or facility, and shall address the following areas.

1. Minimum licensing requirements (including appropriate testing and medical qualification) for personnel operating motor vehicles and powered industrial equipment.
2. Requirements for the use of seat belts and provision of other safety devices.
3. Training for specialty vehicle operators.
4. Requirements for motor vehicle maintenance and inspection.
5. Uniform traffic and pedestrian control devices and road signs.
6. On-site speed limits and other traffic rules.
7. Awareness campaigns and incentive programs to encourage safe driving.
8. Enforcement provisions.

Note: You do not have to do Example 2 on the following page, but it is a good time to check your skill and knowledge of the information covered. You may do the Example 2 or go to the Section 3.
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EXAMPLE 2

1. State the position that is responsible for ensuring that a prework safety meeting is conducted with the construction contractor to review project safety and health requirements.
2. State the provisions that must be implemented regarding firearms safety training, qualification, or requalification.

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3. State the standards and/or codes related to pressure vessels, boilers, air receivers, and supporting piping systems.

Note: When you are finished, compare your answers to those contained in the Example 2 Self-Check. When you are satisfied with your answers, go on to Section 3.
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EXAMPLE 2 SELF-CHECK

1. State the position that is responsible for ensuring that a prework safety meeting is conducted with the construction contractor to review project safety and health requirements.
Construction Project Managers
2. State the provisions that must be implemented regarding firearms safety training, qualification, or requalification
 - Personnel shall successfully complete and demonstrate understanding of initial firearms safety training before being issued any firearms.
 - Personnel authorized to carry firearms shall have access to instruction manuals for each type of firearm with which they are armed while on duty.
 - Authorized armed personnel shall demonstrate both technical and practical knowledge of firearms handling and safety on a semi-annual basis. This demonstration shall be supported by limited scope performance tests, and the results of such testing shall be documented.
 - All firearms training lesson plans shall incorporate safety for all aspects of firearms training task performance standards. Lesson plans shall follow the standards and criteria set forth by the Safeguards and Security Central Training Academy's standard training program. Safety briefings shall be conducted before any live fire training commences, according to DOE M 473.2-1, Firearms Qualification Courses Manual.
 - A safety analysis approved by the Operations Office Manager shall be developed for the facilities and operation of each live fire range. A safety analysis shall be completed and approved prior to implementation of any new training. Results of these analyses shall be incorporated into procedures, lesson plans, exercise plans, and limited scope performance tests.
 - Site-specific firing range safety procedures shall be conspicuously posted at all ranges.
 - Live fire ranges shall be properly sited to protect personnel on the range, as well as personnel and property not associated with the range.

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3. State the standards and/or codes related to pressure vessels, boilers, air receivers, and supporting piping systems.
 - a. American Society of Mechanical Engineers Boiler and Pressure Vessel Safety Code
 - b. American National Standards Institute B.31 Piping Code
 - c. The strictest applicable State and local codes

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SECTION 3, CONTRACTOR REQUIREMENTS DOCUMENT, ATTACHMENT 2

Attachment 2 contains a duplication of much of the information presented in the Order proper and Attachment 1. We will limit the areas of discussion in this section to those topics that were not previously covered in Sections 1 and 2 of this module. This section will concentrate on the following areas in Attachment 2.

- Construction Safety Requirements
- Occupational Medical Program
- Quality Assurance Programs and S/CI Controls

CONSTRUCTION SAFETY REQUIREMENTS

The following requirements and responsibilities apply for construction projects above the monetary threshold established by the Davis-Bacon Act (40 U.S.C. 276a) at Government-owned or -leased facilities where the contract clause "Safety and Health (Government-Owned or -Leased Facility)" applies.

Hazard Analyses.

For each construction operation presenting hazards not experienced in previous project operations or for work performed by a different subcontractor, the construction contractor shall prepare a hazard analysis and have it approved prior to commencement of affected work. These analyses shall identify foreseeable hazards and planned protective measures, provide drawings and/or other documentation of protective measures that a professional engineer or other competent person is required to prepare, and define the qualifications of competent persons required for workplace inspections.

Worker Hazard Awareness

Workers shall be informed of foreseeable hazards and the required protective measures described within the approved hazard analysis prior to commencement of work on the affected construction operation.

Workplace Inspections and Hazard Abatement

During periods of active construction, the construction contractor shall have a designated representative on site at all times. This individual shall conduct and document daily inspections of the workplace to identify and correct hazards and instances of noncompliance with project safety and health requirements. If immediate corrective action is not possible or the hazard falls outside of project scope, the construction contractor shall immediately notify affected workers, post

appropriate warning signs, implement needed interim control measures, and notify the construction manager of actions taken.

Project Safety and Health Plan.

The construction contractor shall prepare and have approved prior to commencement of any on-site project work a written project safety and health plan that provides a proposal for implementing the above requirements. The construction contractor shall also designate the individual(s) responsible for on-site implementation of the plan, specify qualifications for those individuals, and provide a list of those project operations for which a hazard analysis is to be performed.

Occupational Medical Program

Integration

- The establishment of a contractor occupational medical program shall be a basic worker protection requirement.
- A formal, written contractor occupational medical program detailing the methods and procedures used to implement the occupational medical requirements necessary for worker protection and the promotion of a healthful work environment shall be established, maintained, reviewed, and updated.
- The contractor occupational medical program shall provide occupational health services to contractor employees. The goal of these services shall be the earliest possible detection and mitigation of occupational illness and injury.
- To carry out this goal, the contractor occupational medical professional staff shall participate as members of a worker protection team.

Implementation

The physician responsible for delivery of medical services shall be responsible for the planning and implementation of the occupational medical program.

Maintenance of a Healthful Work Environment

- Occupational medical physicians and selected medical staff shall:
 - a. Coordinate with other safety and health professionals (industrial hygienists, health physicists, safety specialists/managers) to identify work-related or work site hazards and their possible health risks to employees;
 - b. Possess a current knowledge of actual or potential work-related hazards (physical, chemical, biological);

- c. Perform targeted examinations based on an up-to-date knowledge of work site risk;
 - d. Identify potential or actual health effects resulting from work site exposures; and
 - e. Communicate the results of health evaluations to management and to those responsible for mitigating work site hazards.
- Contractor management shall provide to the physician responsible for delivery of medical services:
 - a. Employee job task and hazard analysis information;
 - b. Summaries of potential work site exposures of employees prior to mandatory health examinations; and
 - c. The opportunity to participate in worker protection team meetings and committees.

Employee Health Examinations

- Health examinations shall be conducted by an occupational health examiner under the direction of a licensed physician in accordance with current sound and acceptable medical practices.
- The content of health examinations shall be the responsibility of the physician responsible for the delivery of medical services.
- The following classes of examinations are required for the purpose of providing initial and continuing assessment of employee health as determined by the physician responsible for delivery of medical services.
 - a. preplacement according to the Americans with Disabilities Act
 - b. qualification examinations
 - c. fitness for duty
 - d. medical surveillance and health monitoring
 - e. return to work health evaluations
 - f. termination examinations
- The occupational medical department shall be informed of all job transfers and shall determine whether a medical evaluation is necessary.
- The physician responsible for the delivery of medical services or his/her designee shall inform contractor management of appropriate employee work restrictions.

Monitored Care

- The occupational medical program shall be responsible for the review of all monitored care of ill and injured employees to maximize their recovery and safe return to work, and to minimize lost time and its associated costs.
- Contractor management shall notify the physician responsible for the delivery of medical services or his designee when an employee has been absent because of an injury or illness for more than 5 consecutive workdays or experiences excessive absenteeism.

Employee Counseling and Health Promotion

The physician responsible for delivery of medical services shall:

- review and approve the medical aspects of contractor-sponsored or -supported employee assistance, alcohol, and other substance abuse rehabilitation programs;
- approve and coordinate all contractor-sponsored or -supported wellness programs; and
- ensure that immunization programs for blood-borne pathogens and biohazardous waste programs conform to OSHA regulations and Centers for Disease Control guidelines for those employees at risk to these forms of exposure.

Medical Records

- An employee medical record shall be developed and maintained for each employee for whom medical services are provided.
- The confidentiality of all employee medical records shall be observed.
- Employee medical records shall be adequately protected and stored permanently.

Emergency and Disaster Preparedness

- The physician responsible for the delivery of medical services shall be responsible for the medical portion of the site emergency and disaster plan.
- The plan shall be integrated with the overall site plan and with the surrounding community emergency and disaster plan.

Organizational Staffing

- The physician responsible for the delivery of medical services shall be a graduate of a school of medicine or osteopathy who meets the licensing requirements applicable to the location in which the physician works.
- Occupational medical physicians, occupational health nurses, physician's assistants, nurse practitioners, psychologists, and other occupational health personnel shall be graduates of

accredited schools and shall be licensed, registered, or certified as required by Federal or State law where employed.

Quality Assurance Programs and S/CI Controls

The contractor's quality assurance program should include S/CI controls that are commensurate with the risks posed by the facility. This management system shall include the following components.

- Assurance that all items meet the requirements for their intended use.
- Mechanisms to continually update information on S/CIs and associated suppliers.
- Control of the introduction and use of S/CIs through design, procurement, and inspection/maintenance. No S/CI shall be used or introduced intentionally unless found acceptable through the disposition process.
- Identification and disposition of S/CIs in safety systems and applications that create potential hazards.
- Communicating and sharing of S/CIs information.
- Training and informing managers, supervisors, and workers of S/CI controls. including prevention, detection, and disposition of S/CIs.
- Assurance that the standards and methods used in determining the acceptability of items is based on consensus standards and/or commonly accepted industry practices, unless inconsistent with applicable law or otherwise impractical.

S/CI controls shall include:

- Engineering involvement in the procurement process, particularly in development of specifications during inspection and testing, and when replacing, maintaining, or modifying equipment.
- Implementation of procurement procedures that preclude the introduction of S/CIs by: 1) Identifying technical and quality assurance requirements in procurement specifications; 2) Only accepting items that comply with the procurement specifications; and 3) Inspecting inventory and storage areas to identify, control, and disposition S/CIs.
- Development and implementation of procedures for inspection, identification, evaluation, and disposition of S/CIs installed in safety systems. Engineering evaluations of S/CIs installed in safety systems or in applications that create potential hazards shall consider potential risks to the public and worker, cost/benefit considerations, and include a schedule for replacement, if replacement is required.
- Routine maintenance cycles and/or inspection activities for non-safety systems shall include provisions for the identification of S/CIs. S/CIs identified during these activities shall be reported, evaluated, and dispositioned.
- Before destroying S/CIs, the IG shall be consulted to determine whether there is need to retain them in the event of litigation.
- Testing of procured or in place S/CIs as necessary. Engineering personnel shall approve testing methods.
- Reporting S/CIs to the responsible program office and the IG shall be in accordance with DOE O 231.1, DOE O 232.1, and DOE 2030.4B.
- Conduct trend analysis and issue lessons learned for use in improving all S/CIs activities.

Note: You do not have to do Example 3 on the following page, but it is a good time to check your skill and knowledge of the information covered. You may do the Example 3 or go directly to the practice.
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EXAMPLE 3

1. List three components that should be included in the S/CI controls.

2. State the conditions under which a hazard analysis (HA) must be prepared for a construction project. When must the HA be approved?

3. List the classes of examinations that are required for initial and continuing assessment of employee health.

Note: When you are finished, compare your answers to those contained in the Example 3 Self-Check. When you are satisfied with your answers, go on to the practice.

EXAMPLE 3 SELF-CHECK

1. List three components that should be included in the S/CI controls. (Any three of the following constitute a correct answer).
 - Engineering involvement in the procurement process, particularly in development of specifications during inspection and testing, and when replacing, maintaining or modifying equipment.
 - Implementation of procurement procedures that preclude the introduction of S/CIs by: 1) Identifying technical and quality assurance requirements in procurement specifications; 2) Only accepting items that comply with the procurement specifications; and 3) Inspecting inventory and storage areas to identify, control, and disposition S/CIs.
 - Development and implementation of procedures for inspection, identification, evaluation, and disposition of S/CIs installed in safety systems. Engineering evaluations of S/CIs installed in safety systems or in applications that create potential hazards shall consider potential risks to the public and worker, cost/benefit considerations, and include a schedule for replacement, if replacement is required.
 - Routine maintenance cycles and/or inspection activities for non-safety systems shall include provisions for the identification of S/CIs. S/CIs identified during these activities shall be reported, evaluated, and dispositioned.
 - Prior to destroying of S/CIs, the IG shall be consulted to determine whether there is need to retain them in the event of litigation.
 - Testing of procured or in place S/CIs as necessary. Engineering personnel shall approve testing methods.
 - Reporting S/CIs to the responsible program office and the IG shall be in accordance with DOE O 231.1, DOE O 232.1A, and DOE 2030.4B.
 - Conduct trend analysis and issue lessons learned for use in improving all S/CIs activities.
 - Collect and disseminate information on S/CIs to other federal agencies and private industry

2. State the conditions under which a hazard analysis (HA) must be prepared for a construction project. When must the HA be approved?

A hazard analysis must be prepared for a construction project anytime the hazards presented have not been experienced in previous project operations or if work is being performed by a different subcontractor. The HA must be approved before commencement of affected work.

3. List the classes of examinations that are required for initial and continuing assessment of employee health.
- preplacement according to the Americans with Disabilities Act
 - qualification examinations
 - fitness for duty
 - medical surveillance and health monitoring
 - return to work health evaluations
 - termination examinations

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PRACTICE

This practice is required if your proficiency is to be verified at the Familiar Level. The practice will prepare you for the criterion test. You will need to refer to the Orders to answer the questions in the practice correctly. The practice and criterion test will also challenge additional analytical skills that you have acquired in other formal and on-the-job training

PRACTICE

1. State two requirements of a written worker protection program.
2. State the munitions hazard class that the security force personnel are allowed to carry on their person while performing security duties (Refer to DOE M 440.1-1, DOE Explosives Safety Manual).
3. State the minimum dollar value of work-related damage to a government owned vehicle that is considered reportable (Refer to DOE Order O 231.1).

4. Match the following position titles to their corresponding responsibility statements by placing the letter of the position in the blank space to the left of the numbered responsibility statement. Each title may be used more than once or not at all.

Position Titles

- A. Heads of Field Elements
- B. Construction Project Managers
- C. Operations Office Managers
- D. Assistant Secretaries
- E. Assistant Secretary for ES&H

Responsibility Statements

- 1. Establish committees as necessary to assist in the development of departmental requirements and guidance.
 - 2. Ensure that worker protection policies and requirements are effectively implemented.
 - 3. Designate a project manager for each construction project.
 - 4. Review safety and health programs developed for site maintenance and operational activities to determine their applicability and cost effectiveness on construction projects.
 - 5. Determine the necessity for requiring dedicated construction contractor safety and health personnel on project workplaces.
 - 6. Ensure effective implementation and control of the firearms safety program.
5. List three components that should be included in a management system associated with S/CI controls.

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6. State the actions that should be taken by the construction contractor or his/her designated representative if immediate corrective actions to correct a hazard are not possible.
7. State the frequency at which authorized, armed personnel are required to demonstrate technical and practical knowledge of firearms handling and safety.

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8. Describe the acceptable measures used to ensure the safety of pressure vessels when national consensus codes are not applicable.

9. List three areas that must be addressed in a DOE site Motor Vehicle Safety Program.

Note: The course manager will check your practice and verify your success at the Familiar Level. When you have successfully completed this practice, go to the General Level module.

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**DOE ORDER 440.1
WORKER PROTECTION MANAGEMENT FOR DOE CONTRACTOR EMPLOYEES
GENERAL LEVEL**

OBJECTIVES

Given the Familiar Level of this module, a scenario, and an analysis, you will be able to:

1. list the key elements you would look for in the contractor's action plan to correct the situation described in the scenario; and
2. state which requirements, sections, or elements of the DOE Order O 440.1A apply to the situation described in the scenario.

Note: If you think that you can complete the practice at the end of this level without working through the instructional material and/or the examples, complete the practice now. The course manager will check your work. You will need to complete the practice in this level successfully before taking the criterion test.

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RESOURCES

DOE Orders Self Study Program, DOE O 440.1A, Familiar Level, 5/1/98.

DOE Order O 440.1A, Worker Protection Management for DOE Federal and Contractor Employees, 3/27/98.

DOE Order O 231.1, Environment, Safety, and Health Reporting, Change 2, 11/7/96.

DOE Order O 232.1A, Occurrence Reporting and Processing of Operations Information, 8/1/97.

DOE Order O 225.1, Accident Investigations.

DOE Order O 210.1, Performance Indicators Program and Analysis of Operations, Change 2, 5/1/96.

DOE Order O 420.1, Facility Safety, Change 2, 10/24/96.

DOE M 440.1-1 DOE Explosives Safety Manual, 3/29/96.

29 CFR 1960, Basic Program Elements for Federal Employee Occupational Safety and Health Programs and Related Matters.

American Conference of Governmental Industrial Hygienists, Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, most recent edition.

American National Standards Institute Z136.1, Safe Use of Lasers.

American National Standards Institute Z88.2, Practices for Respiratory Protection.

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INTRODUCTION

The Familiar Level of this module introduced DOE Order 440.1A. Several responsibilities and requirements from DOE Order O 440.1 and the Orders and documents listed as resources were discussed. In the General Level of this module, students are asked to apply the information contained in the Familiar Level and the Orders to a series of questions related to the Order. Students are also presented with a scenario that depicts a work situation related to the Orders contained in this module. The example scenario includes a situation, the actions taken to remedy the situation, and the requirements related to the situation. Students will be asked to review the contractor's actions and decide if they are correct. Students will also be asked to decide if the correct Order requirements were cited in each situation. Please refer to the Order to make your analysis and answer the questions. You are not required to complete the example. However, doing so will help prepare you for the criterion test.

Note: You do not have to do the example on the following page, but it is a good time to check your skill and knowledge of the information covered. You may do the example or go on to the practice.
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EXAMPLE SCENARIO

While conducting a walkthrough of Building 493 a technical representative was required to climb a scaffold constructed by facility maintenance personnel. As she approached the scaffold, she noticed the bolts used to assemble the scaffold outriggers, casters, and planking were on the Suspect/Counterfeit Items (S/CI) list.

An investigation of the situation revealed the following.

- At the time these parts were ordered, procedures were not in place, which precluded the purchase of S/CIs on blanket purchase orders or individual purchase orders.
- There was an apparent lack of information on identifying and handling S/CIs.
- Training classes and information bulletins were not available.
- At the time the parts were ordered or installed, management had not adequately defined the policy on the prevention of S/CIs. Procedures that clearly demonstrated methods for preventing the purchase of counterfeit parts and/or inspection methods for their discovery had not been published.
- Today, the policy on S/CIs has been clearly stated and widely disseminated to the employee population. Specific identification, screening, and removal procedures have been implemented in the store stock program, on blanket purchase orders, and in construction contract administration.

Corrective actions taken by the contractor.

- Bolts will be replaced in scaffold.
- Developed a process to evaluate and pre-qualify material vendors supplying parts that are identified as having a high counterfeit potential.
- Developed and provided additional training for personnel responsible for blanket order releases for materials.
- Deputy Director discussed S/CI policy at monthly meeting.

Take some time to review the example scenario and the actions the contractor took to correct the situation. Then decide if the contractor's actions were complete and correct. Finally, identify the requirements, sections, or elements of DOE Order 440.1A apply to this scenario. Write your answer below and then compare your answer to the one contained in the example self-check.

EXAMPLE SELF-CHECK

Your answer does not have to match the following exactly. You may have added more corrective actions or cited other requirements from the Order that apply. To be considered correct, your answer must include, at least the following.

The corrective actions the contractor took are acceptable. One additional action should be considered. Procurement should amend and reissue purchase order contracts to ensure material suppliers have a method in place to appropriately address suspect counterfeit parts.

The requirements from DOE Order 440.1A that apply to this situation include the following.

- Maintain current, accurate information on S/CIs and associated suppliers using all available sources. [Section 4i(5)(b)]
- Train and inform managers, supervisors, and workers about S/CIs controls, including prevention, detection, and disposition of S/CIs.[Section 4I(5)(e)]
- Management systems shall include mechanisms to continually update information on S/CIs and associated suppliers. [Attachment 2, Section 9e(1)(b)]
- S/CI controls shall include implementation of procurement procedures that preclude the introduction of S/CIs. [Attachment 2, Section 9e(2)(b)]

This practice is required if your proficiency is to be verified at the General Level. If you are to be qualified as a facility representative, the practice will prepare you for the criterion test. You will need to refer to the Orders to answer the questions in the practice correctly. The practice and criterion test will also challenge additional analytical skills that you have acquired in other formal and on-the-job training for the facility representative position.

PRACTICE

Please review the following scenario and answer the following questions.

1. Was the situation handled correctly? If not, what should have been done?
2. Was the list of requirements, sections, and elements of DOE Order 440.1 complete and correct? If not, state the correct or omitted requirements.

SCENARIO

A new construction contractor is contracted to excavate around ductwork on the exterior of the North Side of Building 2. The project included the following tasks.

- Excavation of overburden to access ducting laterals and main duct branch in the area of the 13.2KV and 480V power lines on the exterior of the north side of building 2.
- Break up the concrete pad located under the drain line.
- Remove the spoil piles located near the ductwork trenches on the north side of building.

The purpose of the work is to expose the ductwork and electric utility concrete encasement to prepare for the removal activity. The concrete pad is approximately 8 feet by 20 feet by 4 inches thick and is located approximately 3 to 4 feet above a buried 480V line that is encased in concrete. There is a 13.2KV line approximately 3 1/2 feet away from the 480V line that is also buried at approximately 3 to 4 feet and encased in concrete. A utility survey was conducted and the utilities were located before work began. Additionally, the underground concrete encased power lines had been previously exposed, and were in view approximately three feet below grade level.

Construction workers knew the location of both lines and that they were energized.

On February 14, 1996, the Project Leader from Facilities, Security, and Safeguards Facility Project Delivery issued a verbal stop work activity to the construction contractor to prevent using a Daewoo Trackhoe with the hydraulic hammer to break up a concrete pad. The verbal stop work was issued because the contractor is contractually required to hand excavate within five feet of utility lines. The Project Leader also questioned the wisdom of using a jackhammer near utility lines when

there were other effective options available. It was noted that at least one piece of the rubble had slid down onto the 480V encasement.

The Facility Manager requested that the Environmental, Safety, and Health Occupational Safety Section (ESHOSS) conduct a safety analysis of the current work effort for any safety concerns or violation of OSHA requirements. This action was initiated after the Facility Representative (FR) had expressed safety concerns due to the vibrations from the hydraulic hammer and the proximity of this operation to the 480V and 13.2KV power line.

ESHOSS conducted an on-site evaluation on February 15, and reported that there was no indication of any physical impact to the concrete encasement around the 480V and 13.2KV lines. ESHOSS also reported that the job was safe according to OSHA requirements, and they authorized the construction contractor to continue.

The FR still had a safety concern about working within 5 to 6 feet of the energized lines. The FR attempted to discuss this concern with the contractor's safety personnel. However, no safety person from the contractor was available. The FR then called the project leader and was assured that the pad would be lifted up and moved away from the area with a backhoe. The FR agreed that this approach would be acceptable.

On February 16, 1996, work began on the concrete pad using the hydraulic hammer. The FR issued an oral stop work order at this time. The contractor did not have a safety person on site.

Further investigation of the situation revealed the following.

- The utilities had been surveyed and marked or staked three times. However, the work in progress had covered up or removed some of the markings and stakes.
- The Engineering Contract Coordinator had previously stopped the jack hammering operation and suggested an alternate means of removing the concrete slab. He felt this suggestion had been acknowledged by the work supervisor and therefore, believed that no further action was required.

Corrective actions taken by the contractor

- The contractor was told that it must comply with the requirement to hand dig within five feet of utility lines.
- The contractor will discuss the requirement to hand dig within five feet of utility lines at a meeting with supervision. This will be the first such meeting held on this project.
- All project activities will include an on-site supervisor and a safety representative during the use of power equipment.

Requirements that are related to this scenario include the following.

- Dedicated construction contractor safety and health personnel are required on project premises.[Attachment 1, Section 1b.(2)(a)]
- A prework safety meeting with the construction contractor is required.[Attachment 1, Section 1b.(2)(c)]
- The construction manager is required to conduct on-site reviews of safety program effectiveness.[Attachment 1, Section 1b.(2)(f)]
- The safety programs for this operation should have been reviewed to determine their applicability and cost effectiveness.[Attachment 1, Section 1b.(1)(d)]

Write your answers on the next page and then bring the completed practice to the course manager for review.

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Note: The course manager will check your practice and verify your success at the General Level. When you have successfully completed this practice, the course manager will give you the criterion test.